REMARKS

The first Office Action, mailed June 3, 2005, considered and rejected claims 1-20. Claims 1-20 were rejected under 35 U.S.C. § 102(b) as being anticipated by Kaasila (U.S. Patent No. 5,155,805).

By this paper, claims 1, 5, 6, 9, 16, and 20 have been amended.[1] Claim 8 has been cancelled. Accordingly, following this paper, claims 1-7 and 9-20 remain pending. Of these claims, 1, 16, and 20 are the only independent claims at issue.

As reflected in the claims listing above, the present invention is generally directed to embodiments for dynamically determining one or more directions of freedom for one or more control points. As recited in claim 1, for example, this may be done in a computing system that has access to a set of control points used to generate an outline of a graphical object, while the outline is used to determine how the graphical object is rendered on a pixel grid while some control points are constrained to pre-determined locations. As recited, this method includes identifying a first function that represents a first constraint, solutions to the first function indicating compliance with the first constraint. The method also includes calculating—based on the location of the control point and the identified first function—that the control point does not comply with the first constraint. The method further includes automatically determining a first direction of freedom in which the control point can be moved to comply with the first constraint, such that movement of the control point in the first direction of freedom has a reduced likelihood of causing non-compliance with other constraints. As further clarified by the amended claim language, automatically determining a first direction of freedom in which the control point can be moved to comply with the first constraint includes measuring a first angle between a first direction of compliance and a first axis, measuring a second angle between the first direction of compliance and a second axis, and determining that the first angle is smaller than the second angle.

[1] Support for the claim amendments, including amendments related to automatically determining a first direction of freedom in which the control point can be moved to comply with the first constraint by, in part, measuring a first and second angle, and amendments related to using a first direction of compliance to set a second direction of freedom, are clearly supported by paragraphs [0046]-[0049] and [0052]-[0057], among other passages throughout the specification. Additional amendments have been made to correct minor typographical errors. Accordingly, it is respectfully submitted that amendments to the pending claims do not add new matter, and entry thereof is respectfully submitted.

The claimed embodiments recited in the other independent claims (16 and 20) are directed to methods for setting the direction of freedom vectors and to computer program products that generally correspond to the method recited in claim 1, respectively.

Kaasila, the only cited reference, is generally directed to moving control points in displaying digital typeface on raster output devices. However, Kaasila fails to disclose or suggest the method recited in the pending claims. For example, among other things, Kaasila fails to disclose or suggest a method or system for automatically determining a first direction of freedom in which a control point can be moved to comply with the first constraint such that the movement of the control point in the first direction of freedom has a reduced likelihood of causing non-compliance with other constraints. Although Kaasila discloses setting freedom and projection vectors to facilitate movement of a control point, Kaasila clearly fails to disclose a method for automatically determining a first direction of freedom in which a control point can be moved *by measuring the angle between a first direction of compliance and first and second axes, and/or determining that a first angle is smaller than the second angle*, as claimed in combination with the other recited claim elements. In particular, Kaasila teaches that "the Projection vector is set parallel to the line between control points 1 and 0., then the Projection vector is rotated 90 degrees from line 1-0, resulting in the Projection vector being perpendicular to line 1-0." (Col. 10, ll. 21-25). After setting the direction of the projection vector, Kaasila discloses that "the Freedom vector is set to an axis parallel to line between control points 6 and 7. It follows that control point 7 will move along the line defined by control points 6 and 7 since the Freedom vector tells the control point the direction it should move." (Col. 10, ll. 25-30). After setting the direction of the freedom vector based on the "line defined by control points 6 and 7", the "Projection vector [then] determines the desired distance projection between control point 7 and control point 1." (Col 10, ll. 34-36). Finally, a similar process is repeated for a second freedom vector. (*See* Col. 10, ll. 37-43).

Accordingly, Kaasila teaches a method for using a setting direction of a projection vector "perpendicular to line 1-0," and a freedom vector "parallel to line between control points 6 and 7," and fails to disclose or suggest automatically determining a first direction of freedom in which a control point can move by, in part, measuring an angle between the first direction of compliance and first and second axes, as claimed.

Kaasila also teaches using a projection vector to determine *distance* a control point should move, but not disclose or suggest any method for using a first direction of compliance to, in part, determine a first *direction* of freedom in which a control point can move. As a result, not only does Kaasila fail to measure a first angle between a first direction of compliance and a first axis and a second angle between the first direction of compliance and a second axis, but Kaasila also clearly fails to use measurement of a first or second angle in determining a first direction of freedom in which the control point can be moved to comply with a first constraint. As a result, Kaasila fails to anticipate or make obvious the method recited in Claim 1 of the present invention, particularly in combination with the other recited claim elements.

Although the foregoing arguments specifically relate to Claim 1, it will be appreciated that, for at least the foregoing reasons, all of the other rejections and assertions of record with respect to the independent and dependent claims are now moot, and therefore need not be addressed individually. However, to further differentiate between the Kaasila and the present invention, Applicants point out that Kaasila also fails to teach or disclose at least the method recited in dependent claim 9. For example, among other things, Kaasila fails to teach or suggest setting a second direction of freedom perpendicular to the first direction of compliance, the second direction of freedom indicating a direction in which the control point can move to comply with the second constraint, and such that the first direction of compliance is used to set the second direction of freedom. Although Kaasila teaches using an iterative process to determine a first and second freedom vector, Kaasila fails to set the first and second freedom vectors in the same manner as claimed. In particular, Kaasila discloses that for the letter 'Y' a first "Freedom vector is set to an axis parallel to line between control points 6 and 7", while the first "Projection vector is set parallel to the line between control points 1 and 0" and then "rotated 90 degree from line 1-0." (Col. 10, ll. 21-27). Kaasila further discloses that the iterative process repeats these steps such that the second "Projection vector [is set] to be perpendicular to the line defined by control points 5 and 4, and [the second] Freedom vector [is set] to be parallel to the line defined by control points 7 and 8." (Col. 10, ll. 38-43).

Accordingly, Kaasila teaches setting a first projection vector perpendicular to "the line between control points 1 and 0" while a first freedom vector is independently set parallel to the "line defined by control points 7 and 8", while the first projection vector is independently set perpendicular to "the line between control points 1 and 0." As a result, not only does Kaasila fail

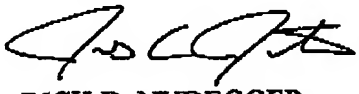
to disclose setting a second direction of freedom perpendicular to the first direction of compliance, the second direction of freedom indicating a direction in which the control point can move to comply with a second constraint, but Kaasila also fails to use a first direction of compliance to set the second direction of freedom.

In view of at least the foregoing, it will be appreciated Kaasila clearly fails to anticipate or make obvious the claimed invention. With regard to the foregoing remarks, Applicants note that the foregoing discussion focused mainly on independent claim 1 and dependent claim 9, such that many of the rejections of record, such as those made to many dependent claims, have not been specifically traversed. Nevertheless, it is not necessary that every rejection be traversed inasmuch as all of the pending claims should now be allowed and distinguished over the art of record, for at least the reasons provided above. Nevertheless, Applicants reserve the right to specifically challenge any of the rejections of record, at any appropriate time in the future, should the need arise, including any official notice.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified though a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 26 day of July, 2005.

Respectfully submitted,



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